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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,496	02/27/2006	Shlomo Magdassi	MAGDASSI 1A	3455
1444 7590 01/21/2009 BROWDY AND NEIMARK, P.L.L.C. 624 NINTH STREET, NW SUITE 300 WASHINGTON, DC 20001-5303			EXAMINER WIESE, NOAH S	
			ART UNIT 1793	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/569,496	Applicant(s) MAGDASSI ET AL.	
	Examiner NOAH S. WIESE	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 36-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/10/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

Status of Application

1. Acknowledgement is made of amendments filed 11/06/2008. Upon entering the amendments, the claims 1-2, 6, 10, and 25 are amended and claims 35-43 are added. The claims 1-43 are pending and presented for the examination. The claims 36-43 will not be examined on merits herein because they are drawn to an invention non-elected by original disclosure, and are thus withdrawn. That is, they are drawn to a method of printing whereas the previously presented claims are drawn to an ink composition, which is a patentably distinct invention. Claims 1-35 are examined on merits herein.

Objections Withdrawn

2. Claim 25 has been amended to overcome the objections set forth in the previous office action. Therefore, the objection to the claim has been withdrawn.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The newly added limitation to claim 1 that the vehicle be a "non-wax" vehicle is not supported in the originally filed disclosure. The

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disclosure that the vehicle is liquid at room temperature does not limit the vehicle to only non-wax materials, and thus there is not teaching to show that only these types of vehicles were part of applicant's original disclosure and invention. Therefore, the claims as amended do not find support in the specification. This is a New Matter rejection.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-10, 15-16, 22-24, 26, 29-30, 32-33, and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Nyssen et al (US 6245138) in view of Nicolin (US 6336723).

Regarding **claim 1**, Nyssen et al teaches a pigment preparation used in ink-jet printing comprising water as a vehicle and an oxide pigment. The ink used in an ink-jet printing process has a viscosity of below 20 mPas (20 cps) (see column 11, lines 54-59). When used in ink-jet printing, this would be the viscosity at jetting temperature. The ink composition taught by Nyssen differs from claim 1 because it does not include sub-micron particles as a binding composition, and therefore does not become an integral part of a substrate when fired. However, it would have been obvious to one of ordinary skill in the art to modify Nyssen in view of Nicolin in order to add such a binding composition because Nicolin teaches that the inclusion of such a binding composition allows for an ink-jet composition to be used for printing on glass substrates.

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Nicolin teaches a method of ink-jet printing on a glass substrate and a composition with which to carry out this printing (see column 3, lines 61-64). Nicolin teaches that a glass sinter (binding composition) is included in the ink composition in order to fuse to the glass substrate when fired at a temperature of 500-700°C (see column 3, lines 4-8 and column 5, lines 8-14). Nicolin specifies a particle size smaller than 3 microns for the particles when used in ink-jet printing (see column 4, lines 17-26). This range encompasses sub-micron sizes, and one of ordinary skill would have used sub-micron sizes in particular when modifying Nyssen in view of Nicolin because Nyssen teaches that the particulate material in the ink composition should be sub-micron, that is, having a size of 0.005-0.5 microns (see column 5, lines 41-43).

One of ordinary skill in the art would have been motivated to include the binding composition taught by Nicolin with the Nyssen inks because doing so would allow one to use the inks for glass substrate printing by causing the ink to fuse to the glass substrate. One would have expected reasonable success in the modification because both patents teach ink-jet printing compositions and specify equivalent viscosities for the compositions. Therefore, claim 1 is obvious and not patentably distinct over the prior art of record.

Regarding **claim 2**, Nyssen teaches that the particulate material in the ink composition has a size of 0.005-0.5 microns, and Nicolin teaches a particle size of below 3 microns. Per MPEP 2144.05, in the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. Further, because Nicolin teaches that the ink is meant to be fired at a temperature of

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500-700°C, the ink would necessarily maintain its optical properties on exposure to temperatures in excess of 500°C.

Regarding **claims 3-6**, Nyssen teaches that the inorganic pigments can be metal oxides, and as discussed above, specifies sizes below 0.5 microns (see column 8, lines 12-34).

Regarding **claim 7**, Nyssen teaches that the inorganic oxide pigment can be copper oxide, titanium dioxide, iron oxide, and cobalt blue (see column 8, lines 12-34).

Regarding **claims 8-9**, Nyssen teaches that an organic solvent such as ethylene glycol monoalkyl or monomethyl ethers can be included in the pigment composition (see column 9, lines 4-23).

Regarding **claim 10**, as discussed above, the obvious modification of Nyssen in view of Nicolin would produce a composition comprising glass frit with sub-micron sizes.

Regarding **claim 15**, Nyssen teaches that a dispersant can be included in the ink composition (see column 1, lines 55-59).

Regarding **claim 16**, Nyssen teaches that the ink composition can include a wetting agent (see column 10, lines 54-61).

Regarding **claim 22**, as discussed above, the Nyssen vehicle is water-based.

Regarding **claim 23**, Nicolin teaches that the sinter (binding composition) can be a silica glass (see column 3, line 5). When using a silica binding composition with the aqueous ink and sub-micron particle sizes specified by Nicolin, this would constitute an aqueous dispersion of silica nano-particles.

Regarding **claim 24**, the Nyssen compositions contain an organic polymer as a dispersing agent (see column 8, lines 36-38).

Regarding **claim 26**, as discussed above the binding composition taught by Nicolin is for sintering at temperatures of 500-700°C.

Regarding **claim 29**, because the organic polymers used in the Nyssen composition are dispersing agent, they are water-soluble organic polymers.

Regarding **claim 30**, Nyssen teaches that acrylic emulsions can be added to the composition (see column 11, lines 41-44).

Regarding **claims 32-33**, as discussed above, the Nyssen ink-jet compositions can comprise additives such as dispersants and wetting agents.

Regarding **claim 35**, as discussed above, Nyssen in view of Nicolin teaches an ink-jet composition have a viscosity below 20 mPas at jetting temperature, being fired (integrated into a glass substrate) at 500-700°C, and containing sub-micron sinter (binding agent) and an organic solvent such as ethylene glycol monoalkyl or monomethyl ethers.

7. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nyssen et al (US 6245138) in view of Nicolin (US 6336723) and in further view of Kniajer et al (US 6346493).

Regarding **claims 11-14**, the claims differ from Nyssen in view of Nicolin because Nicolin does not specify the glass sinter composition. However, it would have been obvious to one of ordinary skill to modify Nyssen and Nicolin in view of Kniajer et al because Kniajer teaches a lead-free glass frit composition. Kniajer teaches a glass frit

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composition comprising SiO_2 , Bi_2O_3 , and B_2O_3 . The ranges of the components encompass those of claims 12-14.

One of ordinary skill would have been motivated to use the frit composition taught by Kniajer et al with the ink taught by Nyssen and Nicolin because the Kniajer composition is lead-free, and because Nicolin does not specify a composition, necessitating a further teaching from another piece of art. Lead is known to be a seriously contaminant, and thus minimizing its use would be advantageous. One would have expected reasonable success in the modification because Nicolin teaches a frit additive and Kniajer teaches a frit with good chemical resistance and weatherability properties. Therefore, claims 11-14 are obvious and not patentably distinct over the prior art of record.

8. Claims 17-18 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nyssen et al (US 6245138) in view of Nicolin (US 6336723) and in further view of Aoki et al (US 5743946).

Regarding **claim 17**, neither Nyssen nor Nicolin teaches that a binder is included in the compositions. However, it would have been obvious to modify Nyssen in further view of Aoki because Aoki teaches that organic binders are advantageous for use with inks having a fusible inorganic component. Aoki et al teaches an ink composition comprising a fusible inorganic component, an aqueous medium (vehicle), and an organic binder (see Abstract), said ink being coated on a substrate by baking. One of ordinary skill in the art would have been motivated to employ the binder taught by Aoki in the Nyssen composition because Aoki teaches that the binder provides properties

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advantageous to the printing use of the ink (see column 3, lines 17-26). One would have expected reasonable success in the modification because Nyssen, Nicolin, and Aoki are drawn to similar types of ink compositions. Therefore, claim 17 is obvious and not patentably distinct over the prior art of record.

Regarding **claims 18 and 34**, Aoki teaches that the binder can be a polyacrylate (see column 4, lines 55-58). 11.

9. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nyssen et al (US 6245138) in view of Nicolin (US 6336723) and in further view of Herrmann et al (US 6332943).

Regarding **claims 19-21**, neither Nyssen nor Nicolin teaches that the ink is a UV-curable-type ink, and thus the inks do not comprising UV-curable agents or photoinitiators or sensitizers. However, it would have been obvious to one of ordinary skill in the art to modify Nyssen in view of Herrmann et al to form a UV-curable ink and thus comprise these elements.

Herrmann et al teaches a pigment preparation for ink jet printing comprising a pigment, an aqueous vehicle, and a dispersant (see claim 1). A UV-curable binder is used for affixing the print (see claim 4). The binder comprises a photoinitiator and a photo-polymerizable monomer (see column 8, lines 62-64 and column 17, lines 30-35). One of ordinary skill would have been motivated to use the UV-curable binder agent with the Nyssen in view of Nicolin composition in order to cause the ink to be UV-curable. This would allow one to have fine control over the curing of the ink. One would have expected reasonable success in the modification because Nyssen, Nicolin, and

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Herrmann are drawn to inks for ink jet printing. Therefore, claims 19-21 are obvious and not patentably distinct over the prior art of record.

10. Claims 25 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nyssen et al (US 6245138) in view of Nicolin (US 6336723) and in further view of Woolf (US 5897694).

Regarding **claim 25-28**, neither Nyssen nor Nicolin teaches the use of a water soluble agent for decreasing sintering temperature. However, it would have been obvious to modify Nyssen in further view of Woolf to add such an agent because Woolf teaches that boric acid is advantageous in ink-jet compositions with similar components as that of Nyssen in view of Nicolin (see claim 17). One of ordinary skill would have been motivated to include the boric acid taught by Woolf in the Nyssen composition because Woolf teaches that the boric acid assists in the adhesion of the ink to the substrate (see Abstract). While this is a different purpose for including the boric acid than that of instant application, this addition would function in the same matter in both ink compositions because they comprise the same components. Therefore, the limitations of claims 25 and 27-28 are met by the modification in view of Woolf, and the claims are obvious and not patentably distinct over the prior art of record.

11. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nyssen et al (US 6245138) in view of Nicolin (US 6336723) and in further view of Zhu et al (US 6251175).

Regarding **claim 31**, the claim differs from Nyssen in view of Nicolin as discussed above because Nyssen and Nicolin do not specify that the polymers used are colloidal systems. However, it would have been obvious to one of ordinary skill in the art to modify Nyssen in further view of Zhu because Zhu teaches that colloidal binder systems are advantageous in ink jet compositions. Zhu et al teaches an ink jet composition comprising a solvent, a colorant, and a resin binder (see claim 1). The binder can be used as a colloidal system (see column 4, lines 14-21). Zhu further teaches that the ink vehicle can be aqueous (see column 1, lines 46-52). One would have been motivated to use a colloidal organic polymer binder taught by Zhu in the composition taught by Nyssen in view of Nicolin because Zhu teaches that the binder serves to provide a rapid dry time, which would be advantageous to printing applications (see column 4, lines 10-13). One would have expected reasonable success in the modification because Nyssen, Nicolin, and Zhu are drawn to ink jet compositions. Therefore, claim 31 is obvious and not patentably distinct over the prior art of record.

Applicant's Arguments

12. Applicant's arguments filed 11/06/2008 have been fully considered but are not persuasive.

Applicant's amendments are successful at distinguishing the pending claims over the previously issued grounds of rejection. However, applicant's arguments regarding the finality of this action or the case of obviousness put forth in the previous office action are not persuasive. Applicant argues that any new reference brought in response to the non-wax vehicle amendment should be brought in a non-final office

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action because this feature should reasonably have been expected to be claimed.

Applicant cites MPEP 706.07(a) in support of this accession, presumably the section reading *"A second or any subsequent action on the merits in any application or patent involved in reexamination proceedings should not be made final if it includes a rejection, on prior art not of record, of any claim amended to include limitations which should reasonably have been expected to be claimed. See MPEP § 904 et seq. **>However, note that an examiner cannot be expected to foresee whether or how an applicant will amend a claim to overcome a rejection except in very limited circumstances (e.g., where the examiner suggests how applicant can overcome a rejection under 35 U.S.C. 112, second paragraph)."* However, this section is directed to applications involved in reexamination proceedings, which this application is not, and thus this argument is not persuasive. Applicant cites MPEP 904 to show the advice it gives regarding the first search, but this section does not discuss in any way the finality of the second action, and thus is not relevant to applicant's contention as to the finality of this action.

Applicant further argues that there is no prima facie case for rejection of claim 8 in the previous office action. Claim 8 recites an organic solvent as the vehicle. Doyle teaches that the carrier (vehicle) can be a wax with a melting temperature as low as 20°C. 20°C would be less than room temperature in most circumstances, and thus these waxes would be liquid at room temperature. Wax is an organic substance, and when used to contain the pigment and frit in the Doyle patent, it would function as a substance. Thus, Doyle does, in fact, teach an embodiment wherein the vehicle is an

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organic solvent that is liquid at room temperature, and there was therefore a prima facie case of obviousness for rejection of claim 8 prior to the amendments.

Applicant additionally argues that there has not been a case of prima facie obviousness made for original claim 9 because modifying Doyle in view of Nyssen et al would not function with the purpose of the Doyle ink compositions. However, these solvents could be used with the Doyle compositions for several reasons, such as viscosity adjustment, that would work with the intent of the Doyle compositions. Thus, the desire for a non-phase change ink would not be the only purpose for the modification, so a prima facie case of obviousness was in fact made. Further, the desire for a non-phase change ink would be present to one of ordinary skill in the art even if Doyle does not specifically teach it, so motivation on these grounds would also not be precluded. Therefore, applicant's arguments regarding the prima facie obviousness cases previously put forth are not persuasive.

Applicant's arguments regarding the finality of this action are not persuasive because the amendments do, in fact, necessitate new grounds and because there is a prima facie case of obviousness on the record for claims 8 and 9.

Conclusion

13. All the pending claims are rejected.

14. The amended claims are rejected under a new grounds necessitated by amendment. Therefore, **THIS ACTION IS MADE FINAL.**

15. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NOAH S. WIESE whose telephone number is (571)270-3596. The examiner can normally be reached on Monday-Friday, 7:30am-5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Noah Wiese
January 12th, 2009
AU 1793

/Karl E Group/
Primary Examiner, Art Unit 1793